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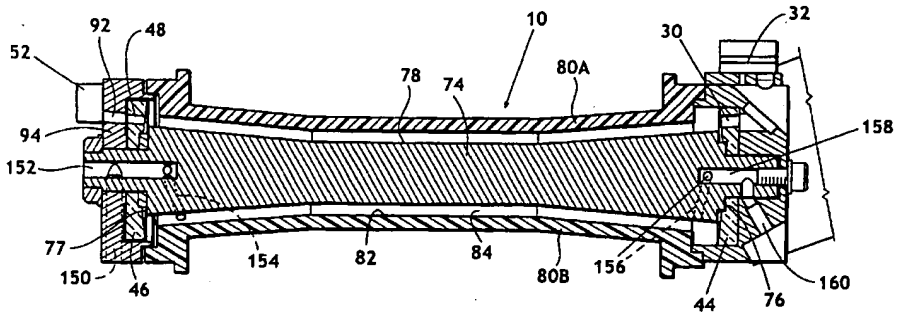
(54) Title: METHOD AND DEVICE FOR DETECTING GASES BY ABSORPTION SPECTROSCOPY



(57) Abstract: A method and device for measuring a concentration of a preselected gas in a gas sample are disclosed. The device comprises a Herriott type multipass cell (10) having a center axle (74) and a housing (80A, 80B) surrounding and spaced from the axle to provide a tubular sample cavity (84). The gas sample is pumped through the sample cavity via apertures (154, 156) provided in opposed ends of the axle. A first mirror (44) and a second mirror (46) are supported at opposed ends of the axle. A light source, e.g. a laser or LED, is provided for emitting a light beam into the sample cavity via an entry aperture (30) in the first mirror, the light beam having a wave length at which the preselected gas strongly absorbs. The beam is reflected between the mirrors for a number of times before exiting the cell via an exit aperture (48) in the second mirror and impinging on a detector (52). The device further comprises a reference detector (32) for monitoring the intensity of the unattenuated light beam and a detector for detecting the intensity of light transmitted through the second mirror after a single pass through the cell. The light source is operatively connected to a heat control assembly having a heat sink and the gas sample is passed said heat sink to augment temperature control of the light source.

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